

Maximum temperatures were slightly above 100° at some point in all southern States except Florida, reaching 117° locally in southern California, 116° in Arizona, and 110° in Texas.

The lowest temperatures were observed mainly from the 23d to 26th, although in a few northeastern and southeastern districts they occurred as early as the 13th or 14th. During the severe cold wave over northern districts from the 23d to 26th the previous records of low temperatures for September were broken nearly everywhere from the eastern portions of Oregon and Washington to the Great Lakes; and in portions of the northern Plateau and northern Rocky Mountain regions the previous minimum records for September were lowered from 5° to as much as 17°. Freezing temperatures occurred at some point in all except the Gulf and South Atlantic States, the lowest observed, -9°, occurring in Wyoming.

## PRECIPITATION

September is the first month of the present year with an outstanding excess of precipitation. Probably two-thirds of the country had amounts above the normal, and over large areas in the central valleys the monthly amounts were the greatest ever measured in September and in some localities the greatest in any month. The monthly falls over much of Florida and the southern portions of Georgia, Alabama, and Mississippi were mainly far above the normal, due chiefly to heavy rains attending the passage of the West Indian hurricane over or near those districts from the 17th to 22d. Precipitation was heavy also over much of the Southwest, Arizona having the wettest September of record.

Following a rather wet August in the central valleys and some eastern districts, the nearly continuous rains of September over the greater part of the same region caused local floods of unusual proportions for that month, delayed the ripening and harvesting of crops and the preparation of the soil for fall seeding and otherwise caused large losses, the details of which appear elsewhere.

Over small areas, principally in the Carolinas and Georgia, the month was notably dry, a few places having the least precipitation of record for September. It was a dry month also in central and eastern Texas, in portions of the western plains and generally over California and some nearby States.

## SNOWFALL

Considerable snow occurred over the northern Rocky Mountain region and nearby areas about the 23d and 24th, in connection with the advance of the severe cold wave into those regions. Heavy falls were reported locally in the mountains of Idaho, Montana, and Wyoming, and smaller amounts in the mountains further south and near-by foothills and Plains. In a few localities, notably in eastern Washington and northern Texas, it was the first record of snow in September.

## RELATIVE HUMIDITY

The relative moisture of the atmosphere was above normal over nearly the entire eastern two-thirds of the country, the humidity percentages being far above normal over the areas having large excesses of precipitation and persistent cloudy weather. In a few far western districts the percentages were less than normal.

## SEVERE LOCAL HAIL AND WIND STORMS, SEPTEMBER, 1926

The table herewith contains such data as have been received concerning severe local storms that occurred during the month. A more complete statement will appear in the Annual Report of the Chief of Bureau

Place	Date	Time	Width of path, yards <sup>1</sup>	Loss of life	Value of property destroyed	Character of storm	Remarks	Authority
Shelby County, Ohio (west-central part)	1	6 p. m.			\$2,300	Tornado	Some crop and property damage	Official, U. S. Weather Bureau.
Taylor County, Tex.	1	8 p. m.				Hail	About 10 per cent crop damage	Do.
Pueblo, Colo.	2	4 p. m.				Whirlwind	A large coal shed wrecked and another moved 500 feet away.	Do.
Webster County, Nebr. (central part of)	2	4 p. m.	440		1,300	Hail	Severe damage over path 5 miles long	Do.
Krider, Nebr.	2	5 p. m.	220		50,000	Tornado and hail	Buildings on several farms wrecked; large trees uprooted; crops badly damaged by hail; 2 persons injured.	Do.
Nemaha County, Kans., in to southern Pawnee County, Nebr.	2	6 p. m.	440		100,000	Tornado	All buildings on several farms completely demolished, on other farms damaged; some livestock killed; crops damaged; several persons injured.	Do.
Sumner, Ill. (near)	2	9 p. m.		1	900	Thunderstorm and rain	Some damage to crops and other property; a boy killed near Beardstown.	Do.
Taylor County, Iowa	2	9 p. m.				Hail and wind	Crop damage about 25 per cent	Do.
Stratton, Nebr.	3	1.50 a. m.	3 mi.		60,000	Hail	Crops severely damaged; some property damage over path 8 miles long.	Do.
Carlinville, Ill.	3	6:30 p. m.		1		Wind	Tents blown over; minor property damage; 2 persons injured.	Do.
Lincoln, Ill. (south of)	4	5 p. m.			2,500	do.	Small buildings damaged over narrow path 5 miles long. Slight crop injury.	Do.
Colorado Springs, Colo.	4	P. m.				Whirlwind and hail	Trees uprooted; tents and fences blown down; cottages damaged.	Do.
Hardin County, Ohio	4	P. m.			50,000	Tornado	Five large barns demolished; one person severely injured.	Do.
Cimarron County, Okla.	4	3-4.30 p. m.	880			Hail	Considerable crop damage over path 45 miles long.	Do.
Owensboro, Ky., and vicinity	5	P. m.				Wind, rain, and electrical	Some damage by lightning; trees broken; some electric power trouble.	Inquirer (Owensboro, Ky.)
Harrisburg, Pa.	6					Thunderstorm, rain, and wind	Much fruit blown from trees; many branches broken.	Official U. S. Weather Bureau.
Furnas County, Nebr. (east part of)	7	6 p. m.	3,520		4,000	Hail and wind	A number of windmills and farm buildings wrecked; trees uprooted; crop damaged.	Do.
Grand Island, Nebr.	7	8.30 p. m.	10 mi.		100	Hail	Slight crop damage; some windows broken	Do.
Hancock County, Iowa	7	10.30 p. m.				Tornado	Several buildings blown down	Do.
Kossuth, Winnebago, and Cerro Gordo Counties, Iowa	7	11 p. m.				Wind	Several buildings blown down in each county	Do.
Yuma, Ariz.	7					Wind and rain	Buildings and irrigation canals damaged; paving undermined; section of railway track washed out.	Do.
Harrison County, Iowa	8	2 a. m.				Hail	Orchards injured	Do.

<sup>1</sup> "Mi." signifies miles instead of yards.

## Severe local hail and wind storms, September, 1926—Continued

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks	Authority
Adair County, Iowa	8	2.45 a. m.			\$20,000	Wind	Crops and buildings damaged	Official U. S. Weather Bureau.
Hancock County, Iowa	9	11.30 p. m.				Wind	Light and power lines damaged	Do.
Vilas, Wis.	11	11 a. m.	1,700		4,000	Heavy hail	Character of damage not reported	Do.
Russell County, Kans.	11	6 p. m.			450	Violent wind	Damage chiefly to farm buildings and livestock	Do.
Manti, Utah	11				6,000	Hail	Damage principally to windows, awnings, and autos.	Do.
Dodge City, Kans. (near)	14	6.30 p. m.				Tornado	No damage reported	Do.
Dodge City, Kans.	14	7.15 p. m.			500	do.	No damage by tornado but some injury to telephone and power lines and buildings by accompanying high wind.	Do.
Cameron, Mo., and vicinity	14	11.30 p. m.			5,000	Wind and rain	Trees broken, buildings damaged and light service suspended.	Do.
Florida (southern and western part) southern Alabama and Mississippi and eastern coast of Louisiana.	18-22			243		Tropical hurricane.	Details of this storm will appear in the October Review.	Do.
Bancroft, Wis.	21	5 a. m.	5 mi.			Heavy hail	Slight damage as all crops had been harvested	Do.
Cranwood, Wis.	21	P. m.	5 mi.		18,000	do.	Damage mainly to cranberry crop	Do.
Wisconsin Rapids, Wis.	21	P. m.			10,000	do.	do.	Do.
Columbiana County, Ohio	23	12.30 p. m.	100	1	30,250	Tornado	Damage principally to property; small crop loss. Three persons injured.	Do.
Clyde (south of) to Huron, Ohio.	23	4-5 p. m.			100,000	do.	Many buildings destroyed or damaged; a number of hogs and cattle killed; hundreds of trees blown down.	Do.
Pittsburgh, Pa. (north of)	23					Wind and rain	Trees uprooted; no other damage reported.	Do.
Sandersburg, Ky. (near)	24					Heavy hail	Late corn and tobacco damaged over a narrow strip.	Do.
Washington County, Md. (east part of)	25	P. m.				Thundergust	Some trees uprooted, others damaged; a frame building and shed unroofed; chimneys blown over.	Do.
Chinook, Wash.	27	6 a. m.			500	Probably tornado	A shed damaged; trees and fences blown down	Do.
Utica, S. Dak. (5 miles east of)	30	7.30 p. m.				Wind	Damage on two farms	Press, Dakotan (Yankton, S. Dak.)
Canton, S. Dak. (south of)	30	9 p. m.				Probably tornado	Farm buildings wrecked; hogs killed.	Do.
Lake Okoboji region, Iowa	30	P. m.				do.	Many cottages and a tabernacle demolished	Do.
Pueblo, Colo.	30					High wind	Fruit industry suffered considerably	Official, U. S. Weather Bureau.

## STORMS AND WEATHER WARNINGS

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## WASHINGTON FORECAST DISTRICT

This month will long be remembered, not only because of the great hurricane that passed west-northwestward over extreme southern Florida on the 18th, but because of the fact that for the first time, so far as is known, four tropical cyclones—three of hurricane intensity—were in existence at the same time (September 14-16) west of longitude 50° W. However, during the latter half of September, 1893, there were four hurricanes in progress simultaneously over the North Atlantic Ocean between longitudes 28° and 76° W. (See Fig. 66, MONTHLY WEATHER REVIEW Supplement No. 24).

During the period September 5-8 there was a gradual decrease in pressure and a consequent lessening of the trade winds at the stations in the Lesser Antilles, and during the 8th and 9th the wind changed from east to gentle northwest or west at several of these stations. By the morning of the 10th the wind had turned to southerly at San Juan, St. Thomas, and Turks Island, and it was quite evident that a disturbance of tropical origin was advancing northwestward between Porto Rico and Bermuda. This disturbance moved very slowly and it was a week later (September 17) that it recurved to the northeast over the ocean after its center reached a point about 250 miles east of the Virginia Capes. The first winds of hurricane force were reported by the steamship *Calliope* in latitude 29° 20' N., longitude 67° 20' W., on the 13th. On the 14th the steamship *Mayaro* steamed through the hurricane center for about 40 miles in about latitude 32° N., and longitude 69° W., barometer 28.78 inches. At 6 p. m. of the 16th the steamship *Fort George*, in latitude 36° 30' N., longitude 69° 10' W., reported a barometer reading of 29.04 inches and a wind of force 12, Beaufort Scale, from the southwest. After recurving,

this storm moved rapidly east-northeastward, its center passing about 300 miles south of Sable Island on the 18th. Advisory warnings were issued in connection with this storm daily, and for a few days twice daily. At 12 noon of the 15th northeast storm warnings were ordered displayed from Cape Hatteras to the Virginia Capes, and at 10 p. m. of the same date north of the Virginia Capes to Nantucket, Mass. The next morning the warnings were extended northward to Eastport, Me. Because of the sharp recurve of the storm center toward the east-northeast, the only winds of verifying velocity at coast stations were 42 miles an hour from the northeast at Nantucket, and 50 miles from the same direction at Highland Light.

During the 12th, another tropical disturbance of hurricane intensity was central almost directly east of Bermuda in longitude 56°, moving northeastward.

At 8 a. m. of the 12th the wind at Swan Island was from the south and vessel reports showed a wind circulation around a center a short distance north of Swan Island, and an advisory warning to that effect was issued at 10.15 a. m. The disturbance, still of slight intensity, passed northeastward over west-central Cuba the evening of the 13th. After leaving Cuba there was a considerable increase in intensity, as shown by the a. m. report of the 15th from Nassau, Bahamas, which showed a barometer reading of 29.64 inches and a wind velocity of 42 miles an hour from the northeast. The northeastward progress of the disturbance was blocked about this time and it was forced toward the west. It passed through the Florida Straits the night of the 16th-17th and dissipated the next day over the extreme southeastern Gulf of Mexico.

A more or less complete history of the great Florida hurricane of September 18-20, together with the warnings issued in connection therewith, will be published in the October, 1926, issue of the REVIEW.—C. L. Mitchell.